UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,919	07/15/2003	Stephen G. Perlman	08258.P008C	7151

27660   7590   05/01/2008
THE LAW OFFICES OF BRADLEY J. BEREZNAK
800 WEST EL CAMINO REAL
SUITE 180
MOUNTAIN VIEW, CA 94040

EXAMINER
MILLS, DONALD L

ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
05/01/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/619,919	PERLMAN, STEPHEN G.
	Examiner	Art Unit	
	DONALD L. MILLS	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 February 2008*.

2a)☐ This action is **FINAL.** 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *28-46* is/are pending in the application.

    4a) Of the above claim(s) *37-46* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *28-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *See Continuation Sheet*.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :09/27/2005, 09/30/2005, 10/27/2005, and 02/22/2008.

DETAILED ACTION

Election/Restrictions

1.　　Applicant's election without traverse of claims 28-36 in the reply filed on 20 February

2008 is acknowledged.

Claim Rejections - 35 USC § 102

2.　　The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
> in the United States before the invention by the applicant for patent or (2) a patent granted on an application for
> patent by another filed in the United States before the invention by the applicant for patent, except that an
> international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this
> subsection of an application filed in the United States only if the international application designated the United
> States and was published under Article 21(2) of such treaty in the English language.

3.　　Claims 28-30, 33, 34, and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by

Ganz et al. (US 6,584,080 B1), hereinafter referred to as Ganz.

　　　　Regarding claim 28, Ganz discloses a wireless burstable communications repeater, which

comprises:

　　　　A tuning on a channel of a frequency band by a first repeater to determine whether the

channel is available for use; testing the channel for reliability by sending data from the first

repeater to a next repeater in the chain, and receiving data back from the next repeater by the

first repeater; and allocating the channel for use as a transmission link between the first and

next repeaters (Referring to Figures 1 and 4, the wireless burstable communications repeater

(WBCR) comprises management software **230** which provides for automatic link testing. Radio

segments are automatically tested (tuning on a channel of a frequency band by a first repeater) at

regular intervals to confirm the viability of the specific link (available for use). The test is

conducted at the data link level by sending special control (testing by sending data form the first

repeater) data packets to a specified designation (a next repeater), which then turns the data

packets around and echoes them back to the source node (receiving data back from the next

repeater by the first repeater). The link tests isolates problem links and steers traffic away form

the problem links; thereby, configuring links for use between repeaters. See column 12, lines 22-

52.)

Regarding claim 29, Ganz discloses *repeating (a)-(c) for each repeater in the chain*

(Referring to Figures 1 and 4, all of the radio segments, between repeaters and users, are tested at

regular intervals to confirm the viability of the specific link. See column 12, lines 22-52.)

Regarding claim 30, Ganz discloses *repeating (a)-(c) for each repeater in the chain with*

each transmission link utilizing a different channel (Referring to Figures 1, 3, and 4, WBCR

comprises management software **230** which provides for automatic link testing. Radio segments

are automatically tested at regular intervals to confirm the viability of the specific link. In the

"repeater chain" comprising WBCR's **10** and **100**, utilizing a frequency hopping spread

spectrum, the chain would include different hopping sequences that enable the segments between

repeaters to coexist in the same geographical area on different channels. See column 12, lines

22-52 and column 7, lines 17-36.)

Regarding claim 33, Ganz discloses *wherein (a)-(c) are performed by at least one*

processor of the WLAN (Referring to Figures 1, 3, and 4, WBCR, part of the WLAN, comprises

management software **230** which provides for automatic link testing utilizing a CPU. See

column 12, lines 22-52.)

Regarding claim 34, Ganz discloses *wherein (a)-(c) are performed by at least one*

processor of an access point that functions as a data source (Referring to Figures 1, 3, and 4, the

WBCR comprises management software **230** which provides for automatic link testing. By

repeating data and performing the generation and communication of testing data packets, the

WBCR acts as a data source See column 12, lines 22-52.)

Regarding claim 36, Ganz discloses *wherein the frequency band comprises a 2.4GHz*

frequency band (Referring to Figures 1, 3, and 4, the WBCR operates in the 2.4GHz band. See

column 7, lines 17-51.)

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

5.   Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ganz

(US 6,584,080 B1) in view of Lau et al. (US 6,690,657 B1), hereinafter referred to as Lau.

Regarding claim 31 as explained in the rejection statement of claim 28, Ganz discloses all

of the claim limitations of claim 28 (parent claim).

Ganz does not disclose *monitoring signal quality of the channel during data*

transmissions.

Lau teaches a multichannel wireless repeater, which comprises a control circuit **130** that tests the relative strength of signals received on a channel, and then selects a switch configuration for repeating mode that corresponds with the strongest received signal (Referring to Figure 14, see column 8, lines 3-16.) Also, Lau teaches that in a FHSS systems, where a total of twelve hopping frequencies may be allocated, for example, three channels may be used by the repeaters and T/R modules where the channels are based on a single hopping sequence. Channels **CH1, CH2,** and **CH3** can hop in a manner that maintains three hopping frequencies of separation between any two active channels. And groups of channels with common suffixes can be simultaneously active and maintain good separation and apparent frequency hop randomness in the network (Referring to Figures 11 and 12, see column 7, lines 16-28.)

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement the signal strength measurement and channeling switching of Lau in the system of Ganz. One of ordinary skill in the art at the time of the invention would have been motivated to do so in order to expand the area of coverage serviced by the wireless repeaters while simultaneously allowing for the active transmission of other devices, as taught by Lau (See column 3, lines 14-28 and column 4, lines 6-16.)

Regarding claim 32 as explained in the rejection statement of claim 28, Ganz discloses all of the claim limitations of claim 28 (parent claim).

Ganz does not disclose *switching to a different channel if the signal quality falls below a certain level.*

Lau teaches a multichannel wireless repeater, which comprises a control circuit **130** that tests the relative strength of signals received on a channel, and then selects a switch

configuration for repeating mode that corresponds with the strongest received signal (Referring

to Figure 14, see column 8, lines 3-16.) Also, Lau teaches that in a FHSS systems, where a total

of twelve hopping frequencies may be allocated, for example, three channels may be used by the

repeaters and T/R modules where the channels are based on a single hopping sequence.

Channels **CH1, CH2,** and **CH3** can hop in a manner that maintains three hopping frequencies of

separation between any two active channels. And groups of channels with common suffixes can

be simultaneously active and maintain good separation and apparent frequency hop randomness

in the network (Referring to Figures 11 and 12, see column 7, lines 16-28.)

It would have been obvious to one of ordinary skill in the art at the time of the invention

to implement the signal strength measurement and channeling switching of Lau in the system of

Ganz. One of ordinary skill in the art at the time of the invention would have been motivated to

do so in order to expand the area of coverage serviced by the wireless repeaters while

simultaneously allowing for the active transmission of other devices, as taught by Lau (See

column 3, lines 14-28 and column 4, lines 6-16.)

6.   Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ganz (US

6,584,080 B1) in view of Heinonen et al. (US 6,968,153 B1), hereinafter referred to as Heinonen.

Regarding claim 35 as explained in the rejection statement of claim 28, Ganz discloses all

of the claim limitations of claim 28 (parent claim).

Ganz does not disclose *wherein the frequency band comprises a 5GHz frequency band*

Ganz teaches that the radio element circuits incorporate an IEEE 802.11 specification at

the 2.4GHz frequency (See column 7, lines 11-19.) Heinonen teaches an apparatus, method and

system for a Bluetooth™ repeater, which comprises pairing the transceiver with an IEEE

802.11a (5 GHz frequency band), b (2.4 GHz) and g transceiver to extend the radius the of

repeaters range (Referring to Figure 1C, see column 4, lines 4-21.)

It would have been obvious to one of ordinary skill in the art at the time of the invention

to implement the multiprotocol transceivers utilizing IEEE 802.11a of Heinonen in the wireless

repeater system of Ganz. Essentially, one of ordinary skill in the art at the time of the invention

could have easily combined the prior art elements (wireless repeater of Ganz and IEEE 802.11a

protocol of the multi-protocol wireless repeater of Heinonen) according to known methods to

yield predictable results. Although Ganz does not explicitly disclose utilizing a 5GHz frequency,

taught by Heinonen, they do teach utilizing an IEEE 802.11 protocol for their wireless repeater at

the 2GHz frequency. Heinonen teaches that one of ordinary skill in the art could have modified

a 2GHz frequency repeater to utilize the 5GHz frequency band too. One of ordinary skill in the

art at the time of the invention would have readily recognized that a single repeater operating in

the 5GHz frequency band was predictable. Therefore, it would have been obvious to modify the

wireless repeater operating in the 2GHz frequency band of Ganz to operate as a wireless repeater

in the 5Ghz frequency band as taught by Heinonen.

Conclusion

7.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to DONALD L. MILLS whose telephone number is (571)272-3094.

The examiner can normally be reached on 9:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Donald L Mills/
Examiner, Art Unit 2616
April 24, 2008